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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,927	01/09/2002	Thomas B. Berg	BEA920000017US1	3067

23441 7590 01/13/2005

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EXAMINER	
MOAZZAMI, NASSER G	
ART UNIT	**PAPER NUMBER**
2187	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	10/045,927	BERG ET AL.	
	Examiner	Art Unit	
	Nasser G Moazzami	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

2. Applicant's arguments with respect to rejected claims have been considered and in light of the declaration filed by one ordinary skill in the art (Donald R. DeSota), the rejection of the claims under 35 USC 112, first paragraph are withdrawn, however, applicant's arguments are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luick (US Patent No. 6088769) in view of Hoover (US Patent No. 6006255).

As for claims 1-2, 4-5, and 7-9, Luick discloses a method for maintaining cache coherence **[maintaining coherence between memories (column 1, line 9)]** in a multiprocessor system having a plurality of nodes **[nodes 101 (see Fig. 1)]**, each node having at least one cache **[cache 115 and cache 117 (see Fig. 1)]**, a memory device local to the node **[memory 105 (see Fig. 1)]**, and at least one processor device **[processor 103 (see Fig. 1)]**, the method comprising: storing information regarding the state of data **[global coherence table 129 indicate the most current copy of data and where it is reside (column 2, lines 50-54)]** in an interconnect **[interconnect bus 124 and global coherence unit 123 (see Fig. 1)]** communicatively connecting said nodes with one another **[note the connection of the nodes with each other through the interconnect bus 124 and global coherence unit 123 (see Fig. 1)]**; checking said stored information to determine the location of the most current copy of a requested portion of data, in response to a request by a requesting node for the requested portion of data **[the global coherence table indicate the data is being shared and also where the most current copy of the data is resided (column 2, lines 50-54)]**; retrieving said current copy of requested portion of data and directing said data to the requesting node **[transferring the data from a first node to a second node (column 2, lines 58-59)]**; checking said stored information to determine the location of the requested data **[global coherence table preferably indicates the location of data (column 2, lines 52-55)]**; and directing the system to send said requested data to the requesting node without going through the said interconnecting communications

pathway node **[when the request hits the local coherence unit. There is no need to go through the interconnect]**.

Luick teaches the claimed invention, but fails to specifically disclose that the state of data is being stored in the interconnect exclusively and that the interconnect is a sole repository of cache coherence information within the multiprocessor system.

Hoover teaches a networked computer system comprising a plurality of nodes, wherein each node includes a plurality of processors and a portion of the overall memory. Hoover further discloses a coupling hub that interconnects node A with the other nodes, the coupling hub includes a partitioned global coherence directory which is utilized to maintain memory coherence across the distributed shared memory system by keeping a complete record of all memory locations that are being held is caches in other nodes in the system **[column 5, lines 13-54]**.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the current invention to use the coupling hub as being disclosed by Hoover into Luick's multiprocessing system in order to handle the data traffic between the nodes and maintain memory coherence across the distributed shared memory.

As for claim 3, Luick discloses that each node includes memory **[local caches 115, 117, and local memory 105 (see Fig. 1)]** accessible to it without communications through said interconnect **[checking local caches or local memory for the requested data (se Fig. 3, steps 301 through 309)]**, and memory accessible remotely by others

of the nodes **[s nding the request to other nodes (see Fig. 3, steps 313 through 321)]**.

As for claim 6, Luick discloses a dispatch buffer **[cache controller 113 (see Fig. 1)]**.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser G Moazzami whose telephone number is (571) 272-4195. The examiner can normally be reached on 7:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NASSER MOAZZAMI
PRIMARY EXAMINER

01/06/2005